SULLIVAN® V LIGHTWEIGHT
SULLIVAN® V PLUS
SULLIVAN® V ELITE

CLINICIAN'S MANUAL

Reorder No: 21805/5 99 06

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SULLIVAN® V LIGHTWEIGHT
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SULLIVAN® V ELITE

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YEAR 2000 COMPLIANT

CLINICIAN'S MANUAL

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WARNINGS AND CAUTIONS

DEFINITIONS

This manual contains special terms and icons that appear in the margins to draw the reader's attention to specific and important information.

WARNING

Alerts the user to possible injury.

CAUTION

Alerts the user to possible equipment problems.

NOTE

An informative or helpful note.

Please read this manual carefully before use.

INDICATIONS

The SULLIVAN V nasal CPAP systems are for the treatment of Obstructive Sleep Apnea (OSA) in adults.

CONTRAINDICATIONS

Nasal CPAP therapy should be used with caution in subjects with the following conditions:

- Existing respiratory failure or insufficiency (such as, risk of increased work of breathing, due either to incomplete reversal of upper airway obstruction; or to breathing at high lung volume, leading to worsening respiratory failure; risk of rebreathing leading to worsening respiratory failure)
- Pneumothorax or pneumomediastinum
- Emphysematous bullae, or past history of pneumothorax (risk of pneumothorax)
- Decompensated cardiac failure or hypotension, particularly if associated with intravascular volume depletion (risk of further hypotension or reduction in cardiac output)
- Massive epistaxis or previous history of massive epistaxis (risk of recurrence)

- Pneumoencephalus, recent trauma or surgery (for example, pituitary or nasal) that may have produced cranio-nasopharyngeal fistula (risk of entry of air or other material into the cranial cavity)
- Acute sinusitis, otitis media or perforated ear drum.

The clinician should assess on a case by case basis the relative risks and benefits of nasal CPAP therapy in such a subject. When assessing the relative risks and benefits, the clinician should understand that the SULLIVAN V series can deliver pressures up to 20 cm H_2O. Also in the unlikely event of certain fault conditions, a maximum static pressure of 35 cm H_2O is possible. If such a pressure could present risk to particular patients, then this device must not be used.

For patients with limited respiratory capacity during sleep (for example, emphysema, reduced central drive, neuromuscular, chest wall or lung parenchymal disease, and similar conditions), the use of SmartStart feature may not be advisable; if the unit is stopped inadvertently by this feature (due to a leak, for example) the patient may not have strong enough breathing to restart the unit.

WARNINGS

- THIS IS NOT A LIFE SUPPORT DEVICE. It may stop operating with a power interruption or if a fault occurs in the product.
- Explosion Hazard - Do not use in the vicinity of flammable anesthetics.
- The SULLIVAN V nasal CPAP systems must only be used with a suitable mask system as supplied by ResMed. ResMed mask systems have a number of special features which are not common to other CPAP mask systems.
- A nasal mask should not be worn unless the machine is turned on and operating properly. The vent holes associated with the mask should never be blocked.
- At low pressures, the flow through the exhalation ports may be inadequate to clear all exhaled gas from the tubing. Some rebreathing may occur.
- The air flow temperature for breathing produced by this device can be as much as 6°C (11°F) higher than the temperature of the room. Caution should be exercised if the room temperature is warmer than 32°C (90°F).
- Do not open the flow generator case or attempt to adjust the unit.

OXYGEN USE

WARNINGS

- If oxygen is used with this device, the oxygen flow must be turned off when the device is not operating.

  Explanation: When the device is not in operation, and the oxygen flow is left on, oxygen delivered into the air delivery tubing may accumulate within the device enclosure and create a risk of fire.
- Oxygen supports combustion. Oxygen should not be used while smoking or in the presence of an open flame.

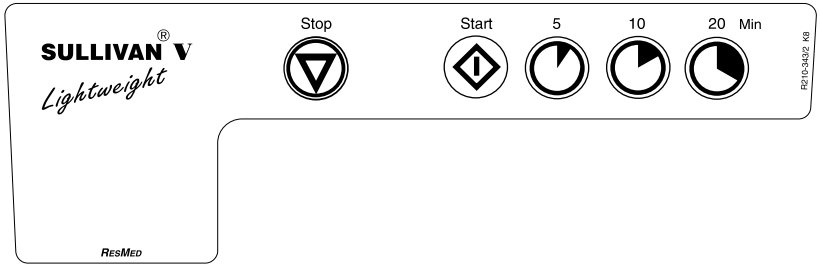
NOTE

At a fixed flow rate of supplemental oxygen flow, the inhaled oxygen concentration will vary, depending on the pressure settings, patient breathing pattern, mask selection, and the leak rate.

THE SULLIVAN V SERIES

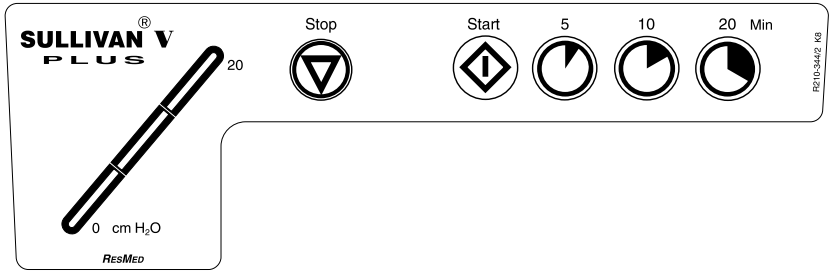
LIGHTWEIGHT

The SULLIVAN V Lightweight is the standard model of the series. It is equipped with a delay timer and international power supply.



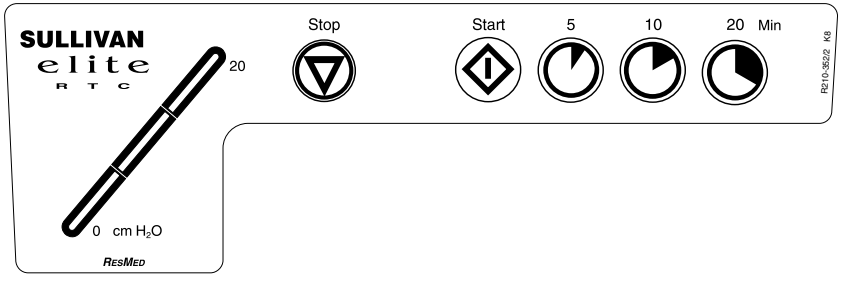
PLUS

The SULLIVAN V Plus has all the features of the Lightweight, and in addition has a carry bag, pressure display on the front panel and an hour meter on the underside.



ELITE

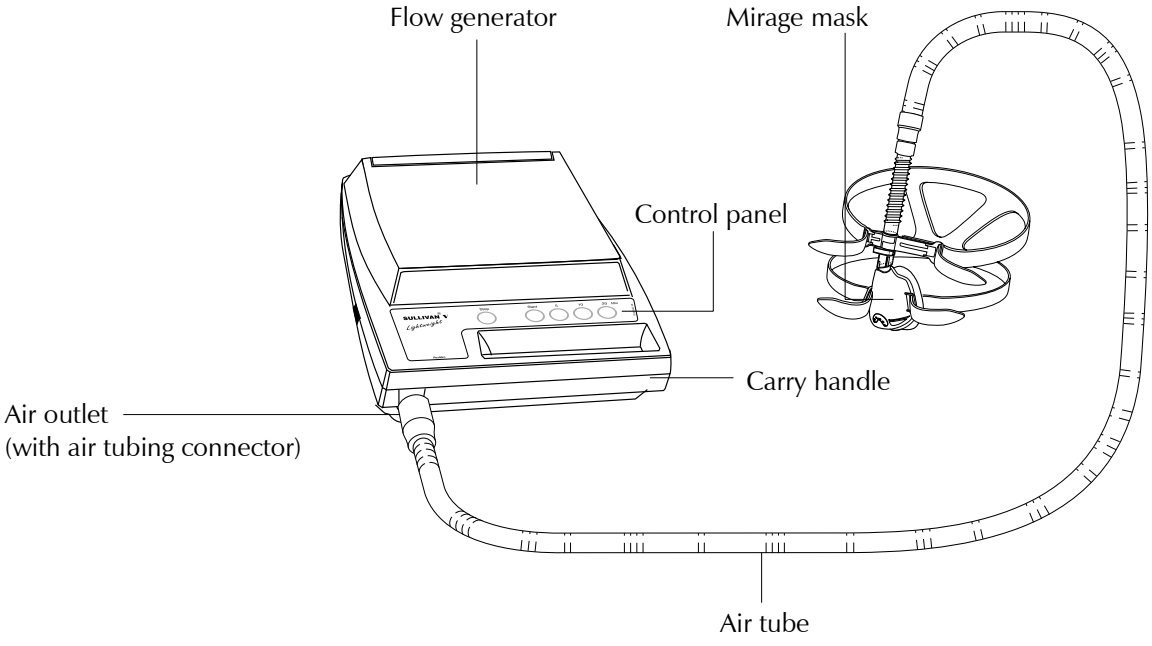
The SULLIVAN V Elite has all the features of the other models, and in addition has pressure feedback, compliance data recording and SmartStart.



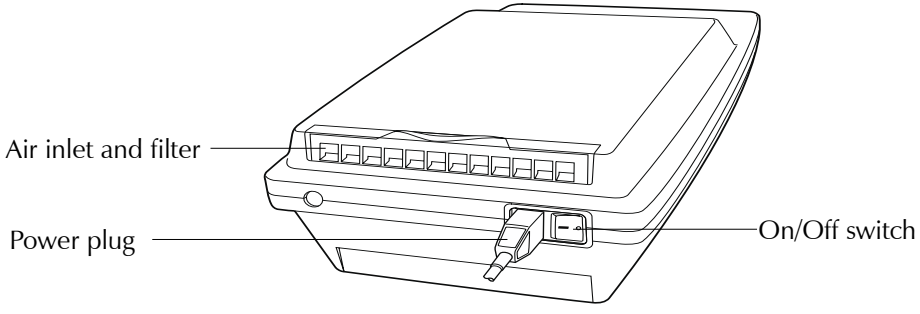
THE FLOW GENERATOR

Please take some time to become familiar with the features of the SULLIVAN V flow generator. For details on the range of accessories available, see "Accessories/Spare parts" on page 29.

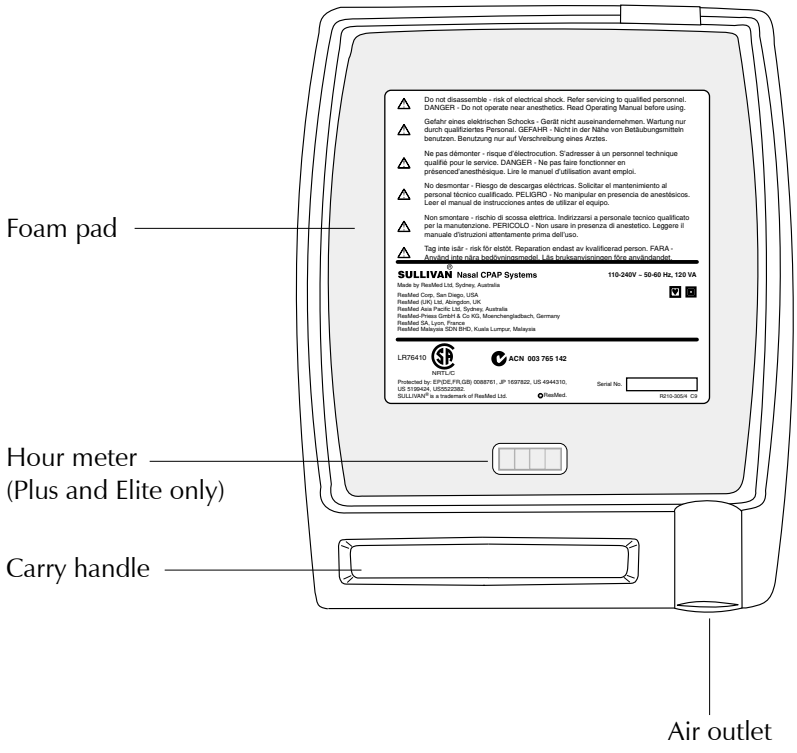
FRONT VIEW



REAR VIEW



Bottom View


Foam pad
Hour meter
(Plus and Elite only)
Carry handle
Air outlet
Do not disassemble - risk of electrical shock. Refer servicing to qualified personnel. DANGER - Do not operate near anesthetics. Read Operating Manual before using.
Gefahr eines elektrischen Schocks - Gerät nicht auseinandernehmen. Wartung nur durch qualifiziertes Personal. GEFAHR - Nicht in der Nähe von Betäubungsmitteln benutzen. Benutzung nur auf Verschreibung eines Arztes.
Ne pas démonter - risque d'électrocution. S'adresser à un personnel technique qualifié pour le service. DANGER - Ne pas faire fonctionner en présenced'anesthésique. Lire le manuel d'utilisation avant emploi.
No desmontar - Riesgo de descargas eléctricas. Solicitar el mantenimiento al personal técnico cualificado. PELIGRO - No manipular en presencia de anestésicos. Leer el manual de instrucciones antes de utilizar el equipo.
Non smontare - rischio di scossa elettrica. Indirizzarsi a personale tecnico qualificato per la manutenzione. PERICOLO - Non usare in presenza di anestetico. Leggere il manuale d'istruzioni attentamente prima dell'uso.
Tag inte isär - risk för elstöt. Reparation endast av kvalificerad person. FARA - Använd inte nära bedövningsmedel. Läs bruksanvisningen före användandet.
SULLIVAN Nasal CPAP Systems
110-240V ~ 50-60 Hz, 120 VA
Made by ResMed Ltd, Sydney, Australia
ResMed Corp, San Diego, USA
ResMed (UK) Ltd, Abingdon, UK
ResMed Asia Pacific Ltd, Sydney, Australia
ResMed-Priess GmbH & Co KG, Moenchengladbach, Germany
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R210-300/4 C9

ASSEMBLY

1

Check that you have the following items:

- a SULLIVAN V flow generator unit
- a power cord
- a length of air tubing
- an air tubing connector
- a mask system (supplied separately).

2

Place the flow generator on a table near the head of the bed.

CAUTION

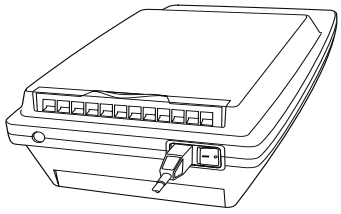
Be careful to place it where it cannot be bumped, and where someone will not trip over the power cord.

NOTE

The flow generator may be placed on the floor beside or underneath the patient's bed. However, you should ensure that the area is free from dust and clear of bedding, clothes or any other objects that could block the air inlet.

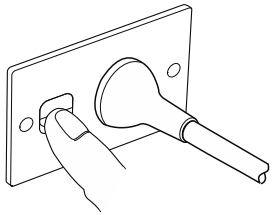
3

Plug the power cord into the power socket at the rear of the flow generator.



4

Plug the other end of the power cord into a power outlet.



5 Assemble the mask system according to the user instructions supplied with the mask system.

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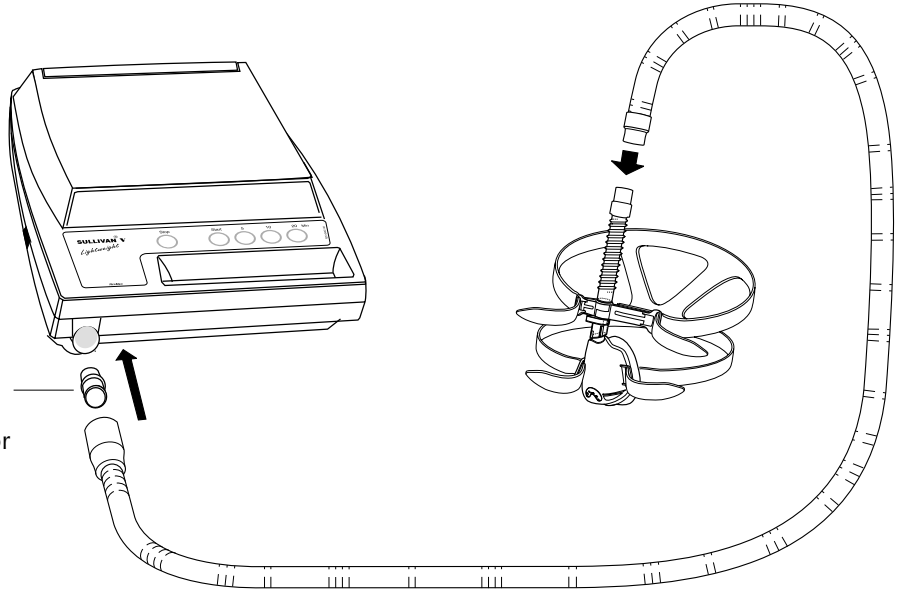
6 Connect the air tubing connector to the air outlet of the flow generator. Connect one end of the air tubing firmly onto the connector and the other end to the mask system.



NOTE

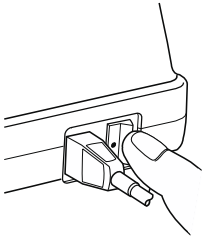
If the patient is using an axial swivel connector (supplied with the modular Mask Frame Kit, or available separately), connect this too. For further information, please refer to the user instructions supplied with the axial swivel.

If you are connecting a humidifier, please refer to the instructions supplied with the humidifier. The Elite model will need to be set to Humidifier ON. See "Elite model" on page 15.

IMPORTANT

- Make sure the power cord and plug are in good condition and the equipment is not damaged.
- Only use the same type of mask and air tubing as originally supplied with the flow generator. A different type of mask or tubing may alter the pressure the patient receives, therefore reducing the effectiveness of the treatment.

7 Turn on the power at the outlet and turn the flow generator switch to ON.



The flow generator is now assembled. To start treatment, see "Preparing for use" on page 11.

PREPARING FOR USE

Before the flow generator may be used by the patient, there are a number of settings that need to be made by the clinician.

- Reset the hour meter
- Set the treatment pressure
- Limit the delay times available
- Set the start pressure
- On the Elite model, you must also set the real-time clock and enable or disable SmartStart. See "Elite model" on page 15.

NOTE:

The UCU2 can be used to adjust the following settings: IPAP pressure, delay times available, start pressure. For further details, please refer to the UCU2 Clinical Manual.

RESETTING THE HOUR METER

The Plus and Elite (and some Lightweight) models are equipped with an hour meter. The hour meter displays the total number of hours that the motor has been running, and may therefore be taken as an indication of compliance. The hour meter may be found on the underneath of the flow generator. See "Bottom View" on page 6.

The hour meter should be reset to zero when the flow generator is given to a patient.

NOTE

You should reset the hour meter before setting the treatment pressure or start pressure.

To reset the hour meter:

1. Hold down the **Start**, **5 minute** and **10 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **Start**, **5 minute** and **10 minute** buttons illuminate.
2. Press the **Stop** and **20 minute** buttons together and release them. The motor will start running.

NOTE

Do not press the Start, 5 minute or 10 minute buttons as this may interfere with the pressure calibration of the flow generator. If one of these buttons has been pressed by mistake, the pressure will need to be recalibrated. See "Calibration" on page 19.

3. Press the **20 minute** button to reset the hour meter.
4. Press the **Stop** button to revert to normal operating mode, or turn the flow generator off.

SETTING THE TREATMENT PRESSURE

To set the treatment pressure, you will need a reference manometer with a range of 0-22 cm H_2O in intervals of 0.1 cm, fitted with a sensor tube (3 or 2.5 mm internal diameter) and a standard Luer taper fitting.

1. Assemble the flow generator as the patient would normally use it complete with mask and air tubing, and connect all accessories (e.g. humidifier, filters, O_2 etc.) that are normally used.
2. Turn on the flow generator to allow the pressure transducer to warm up. The motor does not need to be running; if it does start running, press the **Stop** button to stop the flow. Let the flow generator warm up for 15 minutes
3. Remove the plug from one of the access ports on the mask, and insert the Luer taper end of the sensor tube. The other end of the sensor tube should be fitted to the manometer. If you have a blind bubble, attach it to the mask. If you do not, or are using the Mirage Mask, you will need to block the opening of the mask with the palm of your hand (however, be careful not to block the mask vent).
4. Turn the flow generator off. Hold down the **Start** and **20 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **Start** and **20 minute** buttons illuminate. The motor will start running and will build up to the current pressure setting.
5. Read the pressure on the manometer. Adjust the pressure using the **5 minute** (decrease pressure) and **10 minute** (increase pressure) buttons until the manometer shows the desired pressure. If you wish to set the pressure to 10 cm H_2O, press the **Start** button.

NOTE:

The hour meter on the underside of the flow generator will display the set pressure while in pressure setting mode. However, a manometer should be used when accurate pressure setting is required.

6. Press the **Stop** button to revert to normal operating mode.
   Remember to replace the plug in the access port of the mask.

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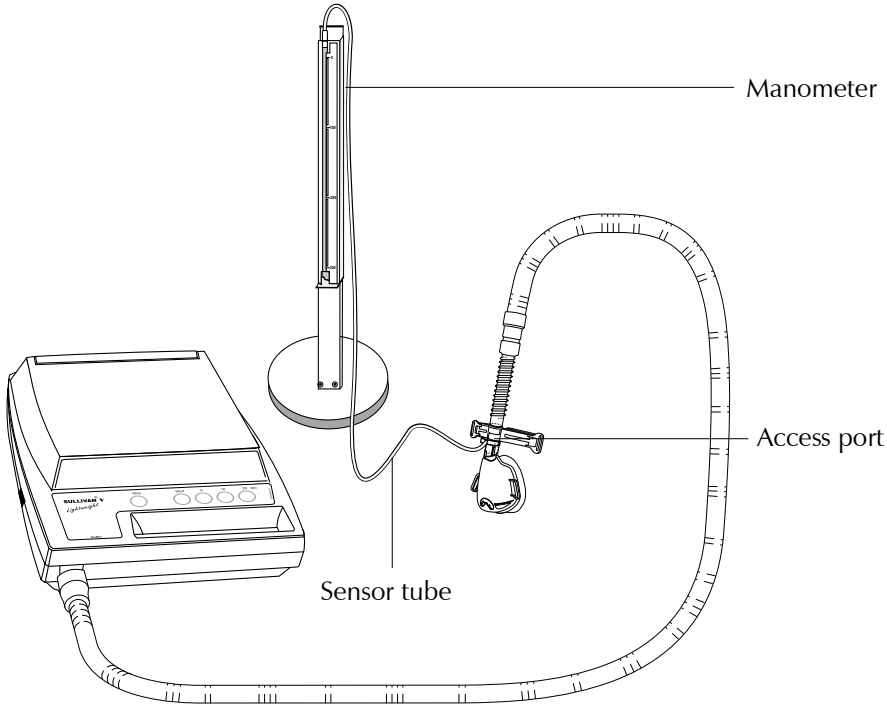


Figure 1 : Setting the Treatment Pressure

LIMITING THE DELAY TIMER

The delay timer starts treatment very gently while the patient falls asleep, and slowly increases to full operating pressure over a selected time period. You can limit the delay times available to the patient. The delay times are 0 (none), 5 minutes, 10 minutes and 20 minutes.

1. Hold down the **5 minute** and **10 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **Stop** and **Start** buttons illuminate. Some other buttons may also light up.
2. The lit buttons indicate which delay times are available. Press the **20 minute** button to add delay times and the **Start** button to remove them.
3. Press the **Stop** button to revert to normal operating mode.

NOTE:

Pressing a delay button which has been disabled will activate the next enabled delay. For example, if the 20 minute delay has been disabled, pressing the 20 minute delay button will activate the 10 minute delay. If all the time delays have been disabled, pressing any of the delay buttons will select Start.

SETTING THE START PRESSURE

The "Start pressure" is the pressure at which the flow generator starts when the delay timer is used. To set the Start pressure, you will need a reference manometer with a range of 0-22 cm H_2O in intervals of 0.1 cm, fitted with a sensor tube (3 or 2.5 mm internal diameter) and a standard Luer taper fitting.

1. Assemble the flow generator as the patient would normally use it complete with mask and air tubing, and connect all accessories (e.g. humidifier, filters, O_2 etc.) that are normally used.
2. Turn on the flow generator to allow the pressure transducer to warm up. The motor does not need to be running; if it does start running, press the **Stop** button to stop the flow. Let the flow generator warm up for 15 minutes.
3. Remove the plug from one of the access ports on the mask, and insert the Luer taper end of the sensor tube. The other end of the sensor tube should be fitted to the manometer. If you have a blind bubble, attach it to the mask. If you do not, or are using the Mirage Mask, you will need to block the opening of the mask with the palm of your hand (however, be careful not to block the mask vent.)
4. Turn the flow generator off. Hold down the **5 minute** and **20 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **5 minute** and **20 minute** buttons illuminate. The motor will start running and will build up to the current Start pressure setting.
5. Read the pressure on the manometer. Adjust the Start pressure using the **5 minute** (decrease pressure) and **10 minute** (increase pressure) buttons until the manometer shows the desired Start pressure. If you wish to set the Start pressure to 4.0 cm H_2O, press the **Start** button.
6. Press the **Stop** button to revert to normal operating mode.

ELITE MODEL

SETTING THE REAL-TIME CLOCK

The real-time clock is used to determine compliance, and must be set before the flow generator is given to the patient. To set the clock:

1. Hold down the **Start** and **5 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **Start** and **5 minute** buttons illuminate.
2. The hour meter on the underside of the flow generator will display the currently set time. Press the **5 minute** button to change the hours and press the **Start** button to change the minutes.
3. Press the **Stop** button to revert to normal operating mode, or turn the power off.
4. The clock battery has a 5 year life span. If you are using the flow generator to monitor patient compliance, be sure to contact your supplier to have the battery replaced before the end of the battery life span.

SMARTSTART

When SmartStart is enabled the flow generator will automatically start when the patient breathes into the mask, and automatically stop when they remove the mask. To enable SmartStart:

1. Hold down the **Start**, **5 minute** and **20 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the pressure display lights come on.
2. Press the **Start** button to enable/disable SmartStart. If the **Start** button is lit, then SmartStart is enabled. If the **Start** button is not lit, then SmartStart is disabled.
3. If the patient is using a humidifier, then the humidifier setting must be set to ON. Press the **20 minute** button to set the humidifier setting. If the **20 minute** button is lit, then the humidifer setting is ON. If the **20 minute** button is not lit, then the humidifer setting is OFF.
4. Press the **Stop** button to revert to normal operating mode, or turn the power off.

AUTOMATIC LEAK ADJUSTMENT

The Elite model uses a pressure sensor to accurately determine the treatment pressure at the patient's mask. If a leak should occur, the flow generator will increase the air flow slightly to maintain the treatment pressure at the set level.

DOWNLOADING COMPLIANCE DATA

The Elite model records up to 200 nights of patient compliance data that can be downloaded for review and print-out. Data may also be downloaded via modem. Please refer to your compliance software manual for details.

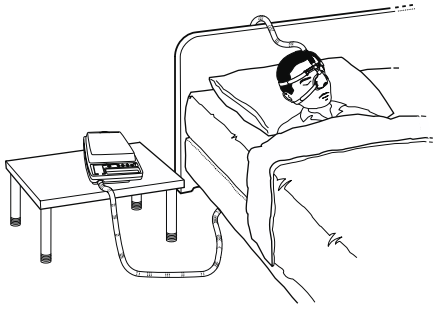
STARTING TREATMENT

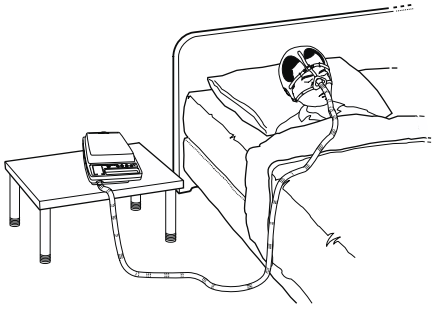
1

The flow generator should be assembled beside the patient's bed with the air tubing and mask system connected. (See "Assembly" on page 7.)

2

Have the patient lie down in bed and put the mask on. Arrange the air tube so that it is free to move if they turn in their sleep.





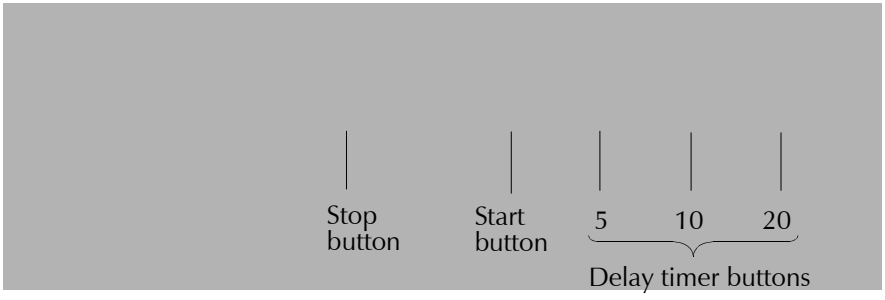
* this configuration is not possible with the Mirage mask

CAUTION

Do not leave long lengths of air tubing around the top of the bed that could twist around the patient's head or neck while sleeping.

3

Start the flow generator in one of three ways:



START BUTTON

Press the **Start** button to start the air flow. The air will begin flowing slowly and build up to full operating pressure in about 10 - 15 seconds.

DELAY TIMER

If the patient has difficulty falling asleep with full pressure, they can use the Delay timer. The airflow will start very gently while they fall asleep, and slowly increase to full operating pressure over a selected time period. They can select a delay time of **5**, **10** or **20** minutes (unless you have disabled some of the delay times).

Choose a delay time and press the corresponding button. The air will start to flow automatically. There is no need to push the **Start** button. If you the patient has not yet fallen asleep after the delay period, they may press one of the delay buttons again.

SMARTSTART (ELITE ONLY)

When SmartStart is enabled the flow generator will automatically start when the patient breathes into the mask, and stop when they remove it. If the patient wants to use the Delay timer, they will need to press a delay button to start treatment. However, the flow generator will still stop automatically. SmartStart can only be enabled by the clinician. See "Elite model" on page 15.

STOPPING

The patient may stop treatment at any time by pressing the **Stop** button. If they have the Elite model and SmartStart is enabled, they can simply remove their mask, and treatment will stop automatically.

GETTING UP

If the patient needs to get up during the night, they must **remove their mask** and turn the flow generator off. The patient should be reminded to replace their mask when they return to bed and turn the flow generator on again.

CALIBRATION

The flow generator is factory calibrated before delivery and will not require periodic calibration for home use. However, for clinical use such as titrations, the calibration should be checked every month.

NOTE:

Some countries require all medical equipment to have a periodic service and calibration. Please check the regulations in your country.

QUICK CHECK

To check the calibration of the flow generator:

1. Set the treatment pressure to 16 cm H_2O using the hour meter display on the bottom of the flow generator. (To do this, see "Setting the treatment pressure" on page 12.)
2. Measure the pressure at the mask using an accurate manometer. If the delivered pressure differs more than 0.5 cm H_2O from 16 cm H_2O, then the calibration will need adjusting.

ADJUSTING THE CALIBRATION

To calibrate the flow generator you will need a reference manometer with a range of 0-22 cm H_2O in intervals of 0.1 cm, fitted with a sensor tube (3 or 2.5 mm internal diameter) and a standard Luer taper fitting.

1. Assemble the flow generator as the patient would normally use it, and connect all accessories (e.g. humidifier, filters, O_2 etc.) that are normally used.
2. Turn on the flow generator to allow the pressure transducer to warm up. The motor does not need to be running; if it does start running, press the **Stop** button to stop the flow. Let the flow generator warm up for 15 minutes.
3. Remove the plug from one of the access ports on the mask, and insert the Luer taper end of the sensor tube. The other end of the sensor tube should be fitted to the manometer.
4. Turn the flow generator off. Hold down the **Start**, **5 minute** and **10 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **Start**, **5 minute** and **10 minute** buttons illuminate.
5. If you have a blind bubble, attach it to the mask. If you do not, or are using the Mirage mask, block the opening of the mask with the palm of your hand (however, be careful not to block the mask vent).
6. Press the **Stop** and **20 minutes** buttons together and release them. The motor will start running and will build up to pressure.

7. Read the pressure on the manometer. Adjust the pressure using the **5 minute** (decrease pressure) and **10 minute** (increase pressure) buttons until the pressure on the manometer reads 16 ± 0.2 cm H_2O.
8. Press the **Stop** button to revert to normal operating mode, or turn the flow generator off.

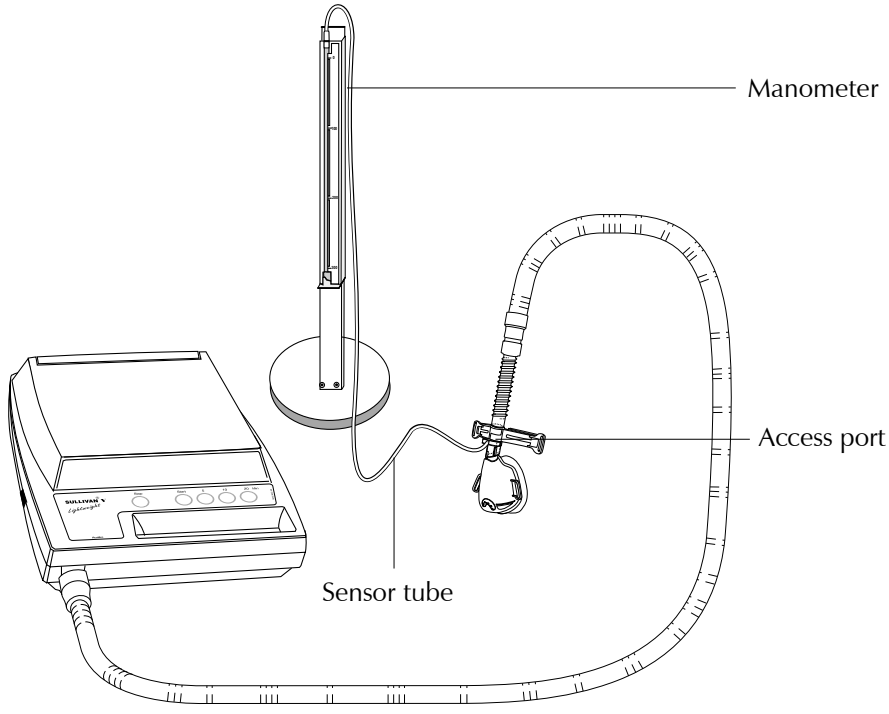


Figure 2 : Calibrating the Flow Generator

NOTE:

The Lightweight and Plus models will need recalibrating if the patient lives above an altitude of 900m (3000'). Contact your supplier for further details. The Elite model has a pressure sensor that automatically adjusts for altitude variations.

CLEANING AND MAINTENANCE

DAILY

Disconnect the air tubing and hang it up in the shade - not in the sun, as the tubing may harden and crack over time.

Clean the mask according to the User Instructions supplied with it.

If you are using a humidifier, clean it in accordance with the instructions in the manual supplied with it.

WEEKLY

Wash the air tube with mild detergent and drip dry. Wash the mask and headgear according to the User Instructions supplied with them.

PERIODICALLY

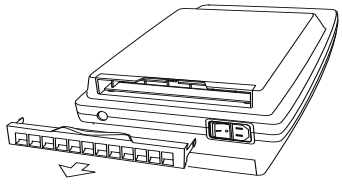
The exterior of the flow generator should be cleaned with a damp cloth and mild detergent.

WARNINGS:

Beware of electrocution. Do not immerse the flow generator or power cord in water. Always unplug the flow generator before cleaning and be sure that it is dry before plugging it back in.

The mask and air tube are subject to normal wear and tear. Inspect them regularly for damage.

REPLACING THE AIR FILTER STRIPS



The air filter strips should be replaced approximately every 6 months (or more often if they become noticeably dirty).

To remove the air filters, slide out the air filter cover.

Instructions on replacing the air filter strip are supplied with the new filters.

WARNING

Do NOT wash the air filter strips. The air filter strips are not washable.

SERVICING

All SULLIVAN V Series flow generators are designed to give years of trouble free operation.

They will not require regular servicing provided that they are cleaned and maintained according to the instructions in this manual. If you feel that your unit is not performing properly, see "Self testing (Plus and Elite models)" below and "Troubleshooting" on page 24.

If it is still not working properly, consult your equipment supplier or take it to an authorized service agent.

CAUTION

Inspection and repair should only be performed by an authorized service agent.

Under no circumstances should you attempt to service or repair the unit yourself.

SELF TESTING (PLUS AND ELITE MODELS)

You may conduct a self test to check whether the flow generator's software and hardware are running correctly.

1. Hold down the **Stop**, **Start** and **5 minute** buttons while you turn on the main power switch at the rear of the flow generator. Keep the buttons pressed until the **Stop** or **Start** buttons illuminate. The flow generator is now in self testing mode. The hour meter on the underside of the flow generator will show **tESt**.
2. One at a time, press the **Stop**, **Start**, **5 minute**, **10 minute** and **20 minute** buttons. Each time, the corresponding button should illuminate.
3. Press the **20 minute** button again. This will initiate three further tests. The motor should start, the lights on the pressure display should cycle upwards and the hour meter should show a repeating cycle 1111, 2222, 3333, 4444 etc.
4. Turn the flow generator off at the main power switch. When next switched on, the flow generator will revert to normal operating mode.

TROUBLESHOOTING

Problem	Possible cause	Solution
*Flow generator does not start when you press the **Start** or **Delay timer** button (and the buttons are not illuminated)*	•Power cord is not connected properly	•Check both ends of the power cord
	•Flow generator is not switched on	•Switch on main switch at rear of unit
	•Power outlet may be faulty	•Try another power outlet
SmartStart is enabled (Elite only) but flow does not start when you begin breathing in the mask	•Power is not on	•Check both ends of the power cord are plugged in properly •Check main switch at rear of unit is on •Power outlet may be faulty. Try another power outlet
	•Breath is not deep enough to trigger SmartStart	•Take a deep breath in and out through the mask
	•Excessive leak	•Adjust position of mask and headgear •Plugs may be missing from ports on mask. Replace them •Air tube not connected properly. Connect air tube firmly at both ends •Air tube kinked or punctured. Straighten or replace air tube
	•SmartStart not enabled	•Check with your clinician
SmartStart is enabled, but the flow generator does not stop automatically when you remove your mask	•Flow generator incorrectly calibrated	•Return to supplier for calibration
	•SmartStart not enabled	•Contact your clinician
	•Incompatible humidifier or mask system being used	•Use only equipment as recommended and supplied by ResMed, or have SmartStart disabled

Problem	Possible cause	Solution
Insufficient air flow delivered from the flow generator	•Delay timer is in use	•Wait for air pressure to build up gradually, or press the **Start** button to start immediately
	•Air filter strips are dirty	•Replace air filter strips
	•Air tubing is kinked or punctured	•Straighten or replace air tubing
	•Air tubing is not connected properly	•Check and tighten both ends of the air tubing
	•Plugs missing from the mask ports	•Replace plugs
Air leaking around nose and eyes	•Nasal cushion not fitted properly onto mask frame	•Fit cushion properly
	•Mask and headgear straps not positioned correctly	•Adjust position of mask and headgear (Note: tighter is not always better)
	•Plugs missing from mask ports	•Replace plugs
	•Nasal cushion is torn or distorted	•Replace cushion
Stop button flashing constantly when flow generator turned on	•Flow generator fault	•Return to supplier for service

WARNINGS RELATED TO TREATMENT

A number of possible problems may arise during the course of CPAP treatment. The following Warning is printed in the User's Manual:

WARNING

If you experience any of the following symptoms during your CPAP treatment, consult your clinician immediately:

- Headache
- Middle ear or sinus discomfort
- Chest pain
- Dryness of the nose, mouth or throat

  (The use of a humidifier may help. Your clinician or equipment supplier can advise you on the range of humidifiers available.)
- Feeling slightly bloated

  (This is usually the result of swallowing air while you are awake. Using the delay timer may help, but consult your clinician if the symptoms persist.)
- Air continually leaking out of the mouth while sleeping
- Recurrence of any sleep apnea symptoms while on CPAP.

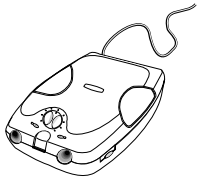
Do not stop your CPAP treatment without the approval of your clinician. Always consult your clinician if you expect to be in a situation where you cannot use your CPAP for more than a few days.

If you are admitted to hospital or prescribed any other form of medical treatment, always inform the medical staff that you are being treated with nasal CPAP. It is also important to contact the clinician who is treating you for sleep apnea.

If you experience an infection of the upper respiratory tract, middle ear or sinus, contact your clinician before continuing your CPAP treatment. You may be advised to stop treatment until the infection has cleared. If you continue with treatment during an infection, it is advisable to wash your mask and tubing more often.

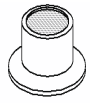
Skin irritation may occur from sensitivity to the materials in the mask or from too much tension in the headgear straps. A correctly fitted mask and optimum tension in the straps will often prevent skin irritation. If problems persist, contact your clinician for advice.

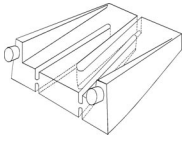
ACCESSORIES/SPARE PARTS



HumidAire™ heated humidifier

HCH Humidification Insert
(Modular mask only)





ResMed Passover humidifier

Chin strap

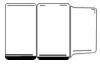
Replacement air filter strips

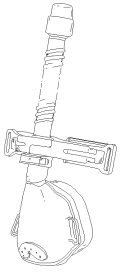
Air tube (2m/6' 6")

Carry bag

Power cord

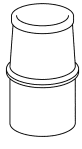
Axial swivel





Mirage Mask

Air tubing connector



SPECIFICATIONS

SULLIVAN® V CPAP FLOW GENERATORS

PERFORMANCE

Operating pressure range: 4 - 20 cm H_2O.

DIMENSIONS (H X W X D)

105 mm x 240 mm x 280 mm

(4.1 in x 9.4 in x 11.0 in)

WEIGHT

Elite: 2.0 kg (4.4 lb), Plus: 2.0 kg (4.4 lb), Lightweight 1.7 kg (3.7 lb)

NOTE: *Weight may vary slightly depending on model.*

POWER SUPPLY

Input range: 110-240 V, 50-60 Hz, 120 VA

HOUSING CONSTRUCTION

Injection molded plastic

AIR FILTER STRIPS

Outer filter strip: polyester fibre

Inner filter strip: open cell polyester-urethane foam

ENVIRONMENTAL RATINGS

Temperature limits: Operating +5°C to +40°C, Storage -20°C to +60°C

Humidity limits: Operating 15 to 95% RH (non-condensing), Storage up to 95% RH (non-condensing)

AIR TUBING

Flexible Hytrel plastic, 2 m (6’ 6”) length

IEC 601-1 CLASSIFICATIONS

Class II

Type CF

NOTE

The manufacturer reserves the right to change these specifications without notice.

GLOSSARY

Class II (double insulated)/Classe II (double isolation)

Type CF Applied Part/ Partie appliquée du type CF

FLOW/PRESSURE CURVE